



DRIVE DEVICE OF LIQUID DROPLET DISCHARGE HEAD, FILM
MANUFACTURING APPARATUS, DRIVE METHOD OF LIQUID DROPLET
DISCHARGE HEAD, FILM MANUFACTURING METHOD, AND ELECTRONIC
EQUIPMENT AND DEVICE PRODUCTION METHOD

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BACKGROUND OF THE INVENTION

Field of the Invention

The present invention relates to a drive device of a vibrator drive type of liquid droplet discharge head, which discharges liquid droplets from a discharge section by extending and retracting a piezoelectric vibrator, a film manufacturing device, a drive method of a liquid droplet discharge head, a film manufacturing method, and an electronic equipment and an device production method.

Priority is claimed on Japanese Patent Application No. 2002-223153 and Japanese Patent Application No. 2003-072336, the contents of which are incorporated herein by reference.

Description of Related Art

Vibrator drive type liquid droplet discharge heads, which discharge liquid droplets by extending and retracting a piezoelectric vibrator, are used in liquid droplet discharge devices referred to as ink jet printers used in liquid crystal display panel production devices and printing devices of computer terminal. Piezoelectric vibrators are composed of components that include a piezoelectric element, and are extended and retracted according to an input drive waveform (for example, a voltage waveform).

In a drive device of a liquid droplet discharge head composed in this manner, the piezoelectric vibrator is driven by a voltage waveform composed of a trapezoidal wave as

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